

ALASKA

LEGEND

— Borough boundary

★ Capital

● City

- - - Regions of mineral activity

**MINERAL SYMBOLS
(Major producing areas)**

Ag Silver

Au Gold

CS Crushed stone

Cu Copper

Gem Gemstones

Pb Lead

SG Construction sand and gravel

Zn Zinc

○ Concentration of mineral operations

REGIONS

I Northern

II Western

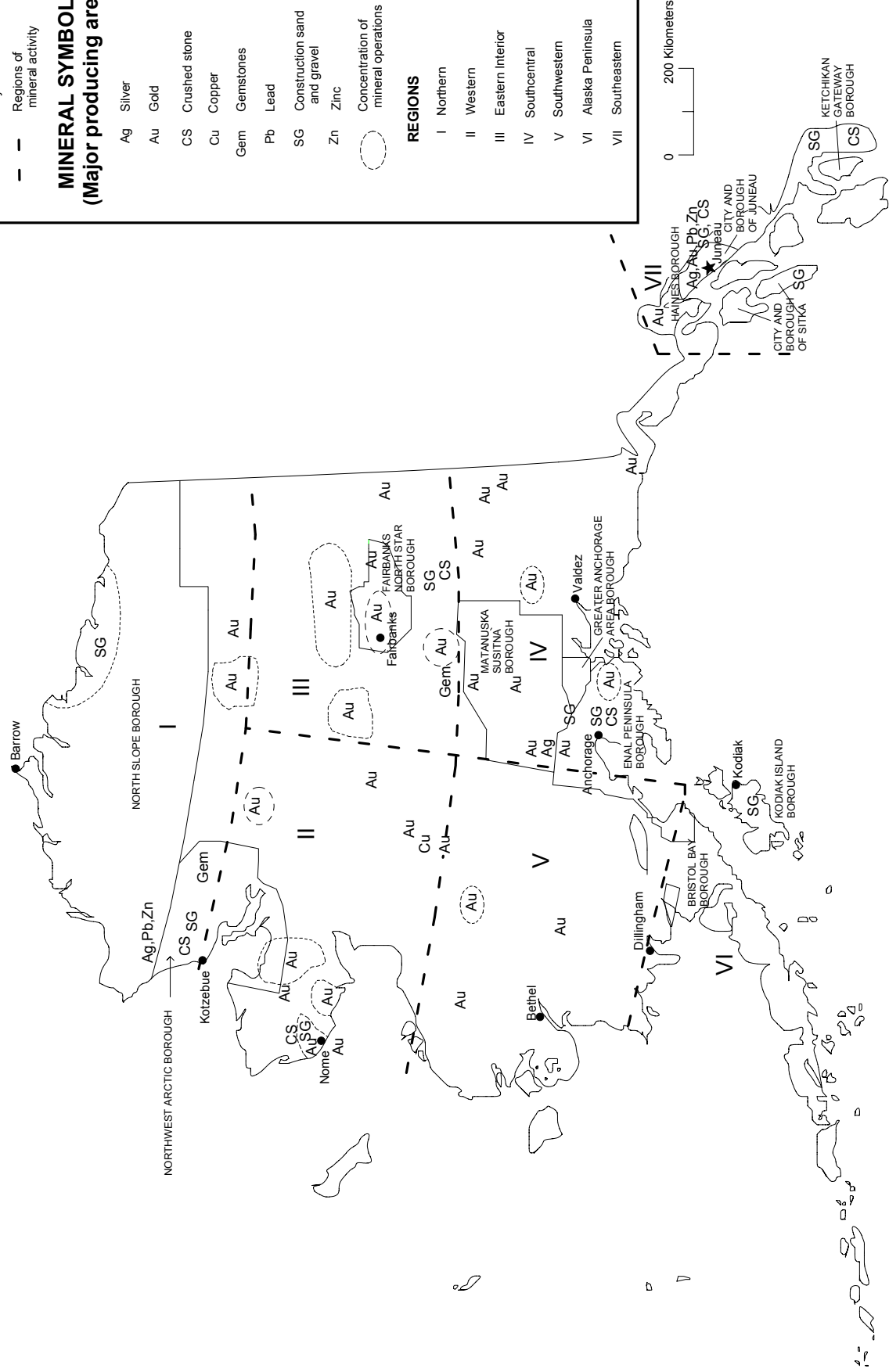
III Eastern Interior

IV Southcentral

V Southwestern

VI Alaska Peninsula

VII Southeastern



THE MINERAL INDUSTRY OF ALASKA

In 2001, the estimated value¹ of nonfuel mineral production for Alaska was about \$1.06 billion, based upon preliminary U.S. Geological Survey (USGS) data. This was about a 5% decrease from that of 2000² and followed 2 years with the same overall total value. The State was 13th in rank in 2001 (12th in 2000) among the 50 States in total nonfuel mineral production value and accounted for about 3% of the U.S. total.

Metallic minerals continued during 2001 to account for about 90% of the State's total nonfuel mineral production value. A large majority of this was from the production of zinc, lead, and silver (descending order of value) at Teck Cominco Alaska Inc.'s Red Dog Mine, which is near Kotzebue in northwestern Alaska, and gold production from the Kinross Gold Corp.'s Fort Knox Mine, which is near Fairbanks in east-central Alaska. (During 2001, Teck Corp. bought controlling interest of Cominco Ltd., and the new company became Teck Cominco Ltd.; the Alaskan subsidiary became Teck Cominco Alaska Inc.) In 2001, most of the State's decrease in nonfuel mineral value resulted from a reduction in the production and value of zinc. But this drop in value was partially moderated by significant increases in the values of construction sand and gravel, lead, and gold. In 2000, conversely, a substantial increase in the production and value of zinc (along with a smaller yet significant increase in construction sand and gravel) was offset mostly by decreases that occurred in the values of gold, silver, lead, and, to a lesser degree, crushed stone, resulting in the State's unchanged total value from that of 1999 (table 1).

Based upon USGS estimates of the quantities produced in the 50 States during 2001, Alaska remained first in zinc and second in lead and silver. The State rose to third from fourth in the production of gold.³ Production of peat was not reported to the USGS partly because of reporting difficulties associated with the seasonal, intermittent nature of the mineral commodity's mining

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the minerals or mineral products. Production may be measured by mine shipments, mineral commodity sales, or marketable production (including consumption by producers) as is applicable to the individual mineral commodity.

All 2001 USGS mineral production data published in this chapter are preliminary estimates as of August 2001 and are expected to change. For some mineral commodities, such as construction sand and gravel, crushed stone, and portland cement, estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. Specialist contact information may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals/contacts/comdir.html>; alternatively, specialists' names and telephone numbers may be obtained by calling USGS information at (703) 648-4000 or by calling the USGS Earth Science Information Center at 1-888-ASK-USGS (275-8747). All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

²Values, percentage calculations, and rankings for 2000 may differ from the Minerals Yearbook, Area Reports: Domestic 2000, Volume II, owing to the revision of preliminary 2000 to final 2000 data. Data for 2001 are preliminary and are expected to change; related rankings may also change.

³Gold figures in table 1, as reported to the USGS, may differ with estimates made by the Alaska Department of Natural Resources, Division of Geological and Geophysical Surveys (DGGs). The canvassing of gold placer mineral

in the State. The Alaska Department of Natural Resources, Division of Geological and Geophysical Surveys (DGGs), estimated peat production to be about 27,600 cubic meters for an estimated value of about \$180,000. Additionally, the DGGs reported production of jade and soapstone combined to be about 1.8 metric tons (t) at an estimated value of \$25,000 (Swainbank and Szumigala, 2002).

The DGGs provided the following narrative information; the data are based on DGGs surveys and estimates (Swainbank and Szumigala, 2002). Throughput at the mill at the Greens Creek Mine near Juneau set a record in 2001, but metal production was down due to milling of lower grade ore. Production at the Red Dog Mine was comparable to that of 2000, as fine tuning of the mill continued well into the last quarter of 2001. Production in 2002 at Red Dog was expected to increase by about 8%. At the Fort Knox Mine, blending of the True North gold ore with the regular Fort Knox ore led to record production in 2001, and with a full year of operation, gold production was expected to increase in 2002. The number of placer gold mines and the amount of placer gold produced continued the steady decline since 1997.

In 2001, Teck Corp. bought controlling interest of Cominco Ltd., and the new company became Teck Cominco Ltd. The Alaskan subsidiary is now Teck Cominco Alaska Inc., and it operated the Red Dog Mine near Kotzebue on behalf of the owner, NANA Regional Corp. The mine milled a record 3.2 million metric tons (Mt) of ore to produce 518,000 dry metric tons of contained zinc, 95,000 dry metric tons of contained lead, and an estimated 184,000 kilograms (kg) of silver. The head grades were 19.8% for zinc, 5.0% for lead, and 86 grams per metric ton (g/t) for silver, resulting in a slight decline in the amount of contained zinc and a slight increase in the amount of lead from that of 2000.

The mine employed about 560 people, including miners, millworkers, maintenance, and portsite workers. Food and accommodations were provided by NANA-Marriott, and trucking was contracted to NANA-Lynden. During the summer shipping and supply season an additional 90 workers were hired for approximately 3 months, and four tugs were used to haul barges out to deeper water to load and offload oceangoing freighters.

Red Dog was a conventional open pit operation, using only three dozers, three 11-cubic-meter loaders, and five 77-t haul trucks, with a water/sand truck, two graders, and two utility

production was discontinued by the U.S. Bureau of Mines (the Federal agency responsible for U.S. nonfuel mineral production data collection from 1924-94) in 1994. Gold production and value data in table 1 contain data that will be further estimated by the USGS in cooperation with the DGGs. Current estimates based on data collected by the DGGs indicate the production quantity in 1999, 16,100 kg valued at \$144 million; in 2000, 17,200 kg valued at \$154 million; and in 2001, 17,100 kg valued at \$149 million (Swainbank and Szumigala, 2002). The USGS final 1999-2001 total gold production and value data for Alaska, done in collaboration with the DGGs, will be published in the USGS Mineral Industry Surveys—Gold, 2001 Annual Review and in the Gold chapter in Volume I of the 2001 Minerals Yearbook.

loaders. Due to the high grade of the ore, the equipment is only about 45% utilized.

Several small placer gold mines reported production in the northern region during 2001, mainly near Wiseman, and there was production from many of the sand and gravel pits near the North Slope oilfields.

American Reclamation Group LLC continued to leach gold from about 680,000 t of ore at the Illinois Creek open pit gold-silver mine south of Galena and intended to continue mining in 2002. Several small placer mines on the Seward Peninsula near Nome and near McGrath also reported some production. Sand and gravel was produced from pits in the Nome area on land owned by Alaska Gold Co., a subsidiary of NovaGold Resources Inc., and a substantial quantity of rock was used in reconstruction of the runway at McGrath.

In April 2001, Fairbanks Gold Mining Inc., a subsidiary of Kinross Gold Corp., began mining at the Hindenburg Pit of True North Mine about 13 kilometers northwest of its mine and mill at Fort Knox. The new mine became fully operational in July. The ore, averaging about 2 g/t, is trucked to the mill at Fort Knox Mine at a rate of about 9,000 metric tons per day, where it is blended with about 27,000 t of Fort Knox ore, averaging about 0.79 g/t. A total of 14 Mt of ore was milled in 2001 to produce 137,000 kg of gold, with a workforce of 360.

About 20 placer gold mines in the eastern interior region reported at least some production.

Several quarries and gravel pits in the eastern interior region produced material for roadwork, mainly on the Taylor Highway and in the Fairbanks area.

The Alaska Railroad hauled a record 3.1 Mt of gravel from pits near Palmer to the Anchorage area, and production was reported from five other operations throughout the area. Production of sand and gravel was reported at Platinum and Kalskag for local work and at Igiugig and Egegik for projects in Togiak, Naknek, Dillingham, and Pedro Bay.

The only major mine in the southeastern region, the Greens Creek Mine, is 29.73% owned by Hecla Mining Co. and 70.27% by Kennecott Minerals Co. In 2001, it milled a record 597,000 t of ore grading 12.12% zinc, 4.75% lead, 746 g/t silver, and 6.7 g/t gold to produce 48,100 dry metric tons of zinc, 17,500 dry metric tons of lead, 301 t of silver, and 2,280 kg of gold.

Exploration expenditures decreased from \$35 million in 2000 to \$22 million in 2001, while development expenditures dropped from \$142 million in 2000 to \$83 million in 2001. The low metal prices also affected the ability of companies to raise capital for exploration, not only in Alaska but globally, and this trend is likely to continue into the year 2002. Compared to the past several years, exploration activity was more evenly

distributed throughout Alaska. The eastern interior region saw a sharp reduction in activity, while the Seward Peninsula and southeastern Alaska experienced a rebirth in activity. Gold remained the major exploration commodity, but polymetallic and platinum-group-element exploration increased from recent levels.

The decline in the amount expended on development in 2001 resulted mainly from the completion of the \$105 million Mill Optimization Project at the Red Dog Mine in northwestern Alaska early in 2001 and also from the completion of the adit into the Liese ore body at Pogo Mine in the eastern interior region. Permitting and road and pit development at True North Mine west of Fort Knox Mine near Fairbanks was completed by midyear.

During 2001, the State of Alaska resumed airborne geophysical surveys under the auspices of the DGGS. Three areas were selected: the northeastern extension of the Upper Chulitna area in the vicinity of Broad Pass-Cantwell; part of the Bonnifield district east of Healy; and part of the Goodpaster mining district southeast of the Pogo deposit. The results were expected to be released in early 2002.

DGGS geologists spent 3 weeks conducting geologic ground-truthing, including geologic mapping and geochemical sampling, in the Salcha River-Pogo geophysical survey area of the Big Delta Quadrangle. A team of DGGS geologists also spent 1 month conducting geologic mapping and geochemical sampling in the Eagle A-1 Quadrangle of the Fortymile area. New geologic maps of the Eagle A-2 Quadrangle based on previous fieldwork were released in 2001, and new geologic maps based on 2001 fieldwork will be released in May 2002.

U.S. Bureau of Land Management (BLM) geologists began field investigations in the Aniak mining district as part of a 5-year study. The BLM geologists were aided by geologists from Calista Corp. and DGGS.

The minerals industry paid almost \$7 million to the State of Alaska in 2001, of which slightly more than \$2 million was for mining license taxes. An additional \$9.7 million was paid to municipalities, and mining companies were the largest taxpayers in the city and Borough of Juneau, and the Fairbanks North Star, Denali, and Northwest Arctic Boroughs. Overall, payments to the State and the boroughs totaled \$16.76 million, slightly more than in 2000.

Reference Cited

Swainbank, R.C., and Szumigala, D.J., 2002, Alaska's mineral industry 2001—A summary: Alaska Department of Natural Resources, Division of Geological and Geophysical Surveys, Information Circular 48, 15 p.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN ALASKA 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1999		2000		2001 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Gemstones	NA	11	NA	11	NA	12
Gold 3/ 4/ kilograms	16,200	177,000	15,600	140,000	16,500	148,000
Sand and gravel, construction	9,620	48,500	10,600	53,500	14,000	71,800
Stone, crushed	1,800 5/	9,900 5/	1,400	7,110	1,500	7,850
Combined values of copper , lead, silver, stone [crushed dolomite, limestone, shell, slate (1999)], zinc	XX	880,000	XX	911,000 r/	XX	833,000
Total	XX	1,120,000	XX	1,120,000 r/	XX	1,060,000

p/ Preliminary. r/ Revised. NA Not available. XX Not applicable.

1/ Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

2/ Data are rounded to no more than three significant digits; may not add to totals shown.

3/ Recoverable content of ores, etc.

4/ Data collected by the State.

5/ Excludes certain stones; kind and value included with "Combined values" data.

TABLE 2
ALASKA: CRUSHED STONE SOLD OR USED, BY KIND 1/ 2/

	1999				2000			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone-dolomite	1	W	W	\$6.00	--	--	--	--
Granite	1	(3/)	(3/)	8.26	2	(3/)	(3/)	\$5.14
Shell	1	W	W	4.33	--	--	--	--
Traprock	4	(3/)	(3/)	5.05	4	(3/)	(3/)	5.03
Slate	1	W	W	6.00	--	--	--	--
Miscellaneous stone	9	1,280	\$7,180	5.61	6	611	\$3,130	5.12
Total or average	XX	1,800	9,900	5.51	XX	1,400	7,110	5.08

W Withheld from total to avoid disclosing company proprietary data. XX Not applicable. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Data derived, in part, from Alaska Division of Geological and Geophysical Surveys Information.

3/ Withheld to avoid disclosing company proprietary data; included in "Total."

TABLE 3
ALASKA: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2000, BY USE 1/ 2/ 3/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregates (+1 1/2 inch):			
Riprap and jetty stone	(4/)	(4/)	(4/)
Other coarse aggregate	W	W	\$7.33
Coarse and fine aggregates, graded road base or subbase	W	W	3.62
Unspecified: 5/			
Reported	510	\$2,630	5.16
Estimated	850	4,300	5.08
Total or average	1,400	7,110	5.08

W Withheld to avoid disclosing company proprietary data; included in "Total."

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Data derived, in part, from Alaska Division of Geological and Geophysical Surveys Information.

3/ Includes granite, miscellaneous stone, and traprock.

4/ Less than 1/2 unit.

5/ Reported and estimated production without a breakdown by end use.

TABLE 4
ALASKA: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2000, BY MAJOR USE CATEGORY 1/

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand) 2/	1,460	\$5,900	\$4.03
Concrete products (blocks, bricks, pipe, decorative, etc.)	33	237	7.18
Asphaltic concrete aggregates and other bituminous mixtures	652	4,970	7.63
Road base and coverings	443	2,520	5.68
Fill	1,200	3,680	3.06
Snow and ice control	9	74	8.22
Railroad ballast	129	1,070	8.32
Other miscellaneous uses	2	10	5.00
Unspecified: 3/			
Reported	6,290	33,200	5.28
Estimated	360	1,800	5.06
Total or average	10,600	53,500	5.06

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Includes plaster and gunite sands.

3/ Reported and estimated production without a breakdown by end use.